ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Petition of	)	RM 9462
	)	
the Federal Aviation Administration	)	
	)	
to Amend Part 87 of the Commission's Rules	)	
	)	
	)	

Comments

Aeronautical Radio, Inc. ("ARINC") and the Air Transport Association of America ("ATA"), by their attorneys, pursuant to Section 1.405 of the Commission's Rules, hereby submits its Comments in opposition to the Petition for Rulemaking submitted November 19, 1998, by the Federal Aviation Administration (FAA) , and in support of an agreement which has been negotiated among the various elements of the air transport industry (including the FAA) as to implementation of Flight Information Service-Broadcast (FIS-B).[1]

ARINC is the communications company of the air transport industry and has been entrusted by that industry and the Commission with the management of the aeronautical enroute spectrum. As such, ARINC currently holds over 6,000 licenses, including over 200 assignments

[1] Public Notice of the FAA Petition was given February 5, 1999 (Report No. 2315). On February 25, 1999, the FAA requested that the time for responses to its Petition be extended to April 19, 1999, to enable the FAA to consult with affected parties, and ARINC supported this request on March 2, 1999.

in the band 136.5-136.975 MHz. These facilities are used to ensure the safe, economic, and efficient operation of aircraft, and to promote the safety of life and property in the air.

The ATA is the national trade and service association of the United States airline industry. It currently represents 23 major U.S. passenger and cargo carriers in the U.S. and 5 associate (non-U.S.) carriers.[2] ATA represents its membership by promoting aviation safety, advocating industry positions, conducting designated industry-wide programs, and promoting public understanding.

The FAA Petition would make fundamental changes in the FCC's allocation of spectrum in the 136-137 MHz band. The FAA asserts that some of these changes are needed to meet requirements for air traffic control (ATC) communications, especially the agency's planned transition from analog voice to a new digital voice system, and to accommodate FIS-B. The FAA Petition, however, would go far beyond what is needed for these two *future* requirements and would negatively impact the *current* use of the band by ARINC and civil aviation for aeronautical operational control (AOC) communications. In addition, the civil aviation community, through ARINC, ATA, and the Aeronautical Frequency Committee (AFC)[3] have

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[2] ATA's members are Airborne Express, Alaska Airlines, Aloha Airlines, America West Airlines, American Airlines, American Trans Air, Atlas Air, Continental Airlines, Delta Air Lines, DHL Airways, Emery Worldwide, Evergreen International, Federal Express, Hawaiian Airlines, Midwest Express, Northwest Airlines, Polar Air Cargo, Reeve Aleutian Airlines, Southwest Airlines, Trans World Airlines, United Airlines, United Parcel Service, and US Airways. ATA's associate members are Aeromexico, Air Canada, Canadian Airlines International, KLM--Royal Dutch Airlines, and Mexicana Airlines.

[3] The AFC is a committee consisting of representatives of the airspace users that advise the ARINC Board of Directors on spectrum management matters. Members of the AFC include representatives of Aircraft Owners and Pilots Association (AOPA), America West Airlines, American Airlines, Continental Airlines, Delta Air Lines, Federal Express, Helicopter Association International (HAI), National Business Aircraft Association (NBAA), Northwest

(Continued...)

implemented extensive plans for expansion of existing services, including the original aeronautical mobile data service (ARINC's ACARS), an ACARS-compatible air-ground data service using SITA facilities (AIRCOM), and voice communications for commuter air carriers recently brought under the requirements of Part 121 of the Federal Aviation Regulations.[4] The FAA proposal would be devastating to these existing and planned safety services and is unnecessary to achieve its goals.[5] Moreover, taking spectrum from the private sector as proposed by the FAA would run counter to the recent mandates of Congress that the government yield unused and surplus spectrum for more efficient use by the private sector.[6] For these reasons, ARINC and ATA oppose the FAA Petition for Rulemaking.

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Airlines, Trans World Airways, United Airlines United Parcel Service, and US Airways. ATA, IATA, and the Federal Aviation Administration (FAA) also send non-voting participants.

[4] *See* Commuter Operations and General Certification and Operation Requirements (FAA Docket 28154), 60 Fed. Reg. 65832, 65852-53 (December 20, 1995). 14 C.F.R. § 121.99 requires air carriers to have communications between their aircraft in flight and their dispatchers on the ground continuously available over their routes and that such communications be provided over non-government facilities.

[5] First, the spectrum should remain non-government. The need for the 136-137 MHz band was primarily for AOC. *See* Report & Order, FCC Docket 20271, 70 F.C.C.2d 1193, 1234 (1978). In implementing the 1979 WARC, the FCC designated the entire band as non-government. *See* Second Report & Order, FCC Docket 80-739, 49 Fed. Reg. 2358 (1984). When the band was finally available for aeronautical use on January 1, 1990, the FCC continued the non-government designation. *See* Report & Order, GEN Docket 89-295, 5 FCC Rcd 3954 (1990), *recon.* 6 FCC Rcd 2291 (1991). Second, to the extent that the FAA claimed a need for spectrum in 1990, the FCC found that need met by its decision that "fifteen channels are allotted for general aviation use such as AWOS, ATIS, control tower and advisory communications [and] . . . five channels are temporarily held in reserve for future general aviation services. 5 FCC Rcd at 3958. The FCC reported at the time that this allotment was "supported by the FAA." *Id.* at 3957.

[6] *Cf.* Emerging Telecommunications Act of 1993, 1993 U.S. Code Cong. & Admin. News at 590-97.

Nonetheless, ARINC, ATA, and other representatives of the air transport industry have met with the FAA to determine what is needed for implementation of FIS-B and to accommodate future, higher capacity digital communication systems. As a result of these meetings, certain agreements have been reached that are reflected by the Rule changes in Appendix A hereto.[7] The FAA, ARINC, and ATA have agreed:

- Two frequencies are sufficient to accommodate FIS-B, and ARINC will make one of these available from the AOC portion of the band 136-137MHz;
- FIS-B can be provided under the present FCC Rules for aeronautical enroute or air traffic control services;
- FIS-B should be provided initially using VDL Mode 2 broadcast and to do this the emission designator 14K0G1D should be added to the FCC Rules;
- FIS-B assignments will be based on a one-way broadcast service, and aircraft transmissions on the frequencies used for FIS-B should not be permitted; and
- Finally, in addition to these items of agreement, certain editorial modifications should be made pertaining to the use of the band 136.500-136.975 MHz, but the FAA has expressed no views on these latter changes.

First, ARINC and ATA submit that FIS-B, using currently standardized aeronautical data communications, can be provided on a single frequency nationwide. Nonetheless, ARINC, ATA, and the FAA staff agreed that two frequencies would be sufficient for FIS-B. In order to mitigate possible impact on future FAA requirements, ARINC and ATA have agreed, subject to approval by the AFC and the ARINC Board of Directors, that ARINC would make arrangements with the FAA's selected FIS-B provider for licensing and assignment of stations on 136.500 MHz using VHF Datalink Mode 2 (VDL Mode 2) in a broadcast configuration for a period of

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[7] The FAA has taken no position on the proposed changes to Section 87.263 of the Rules.

five years.[8] The FAA would make available the second frequency from the ATC allotment in the band 136-136.475 MHz. Subsequent to this agreement, the FAA has concluded that it could make a total of three frequencies available from the ATC spectrum in the band 136-136.475 MHz for FIS-B.

Second, FIS-B communications can be accommodated under the present FCC Rules, either within the aeronautical enroute service or the air traffic control service,[9] and thus, there is no need for any modification of the FCC's Rules to create a new service. Indeed, the creation of a new service could limit the ability of civil aviation and the FAA to meet new and changing communication requirements in the future. Therefore, ARINC and ATA oppose any modification of the Rules that would create a new aviation radio service for FIS-B. Moreover, the FAA represents that a contract for FIS-B will be for five years only, and that after that period, new ATC frequencies will be made available or the service will be superseded by a new weather distribution system. In addition to implementation of FIS-B, the FAA has request that it be given access to all 20 channels in the 136-136.475 MHz band on a shared basis with stations licensed by the FCC. This would require a modification of Footnote US244, which currently limits the FAA to 15 designated frequencies in this band. ARINC and ATA support this change in the lower half of the 136-137 MHz band as part of this overall compromise.

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[8] VDL Mode 2 is a new aeronautical communications protocol using D8PSK modulation at a data rate of 31.5 kbs in a 25 kHz channel. This new technology has achieved international standardization through Standards and Recommended Practices (SARPS) of the International Civil Aviation Organization (ICAO).

[9] FIS-B can be authorized under either Subpart O (airport control tower stations) or Subpart S (automatic weather observation stations) of Part 87 of the Rules.

Third, in order to implement a new high capacity data communications service in the band 118-137 MHz, which may include graphical weather products, FIS-B should be based on the most efficient aviation communications technology that is approved by the Standards and Recommended Practices (SARPs) under Annex 10 to the Convention on International Civil Aviation. The candidate system would thus utilize VDL Mode 2, at least initially. Amendments to the FCC Rules to permit VDL Mode 2 (14K0G1D) emission throughout the band 136-137 MHz are required. In addition, the FAA's Petition anticipates implementation of a TDMA-based digital technology in the band 136-136.475 MHz, and eventually throughout the ATC portions of the VHF aeronautical communications spectrum. This TDMA system is sometimes referred to as VDL Mode 3 and utilizes the same modulation (D8PSK) as VDL Mode 2. The emission designator for VDL Mode 3 is 14K0G7D. Both the VDL Mode 2 and VDL Mode 3 emission designators should be permitted in the 136-137 MHz band, and to meet requirements for future systems, these emissions should also be permitted throughout the VHF aeronautical mobile (R) band 118-137 MHz.[10]

Fourth, the assignment of frequencies to FIS-B stations under this compromise is based on broadcast system design in which the ground stations will broadcast information to aircraft without any need for acknowledgment or other airborne transmissions. Airborne transmissions in these frequencies would interfere with this service over wide areas, and complicate coordination with Canada and Mexico. Therefore, in order that the broadcast nature of FIS-B be protected, the

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[10] The rules in the Appendix are based on the ICAO SARPs for VDL Mode 2. 3 ICAO Annex 10, ¶¶ 6.2, 6.3 (1997). SARPS have not been adopted for VDL Mode 3.

frequencies set aside for FIS-B by ARINC and the FAA should be designated by the FCC Rules for ground to air broadcast use only.

Finally, the FAA Petition underscores the shortage of spectrum for aviation communication today. In order that all of the 136-137 MHz band is clearly available to meet the growing needs of the air transport industry efficiently and to enable the industry to shift to more spectrum-efficient technology, the FCC should also remove the superseded provisions from Section 87.263(a)(1) and (5) of the Rules relating to helicopter flight following systems in the Gulf of Mexico. The FCC reserved these special purpose channels in the Gulf of Mexico only for systems first established by December 31, 1993,[11] and the Commission confirmed on reconsideration that this reservation was not permanent.[12] Only Chevron implemented such a system before January 1, 1994. The Chevron system, utilizing 136.750 MHz, should continue to be accommodated by the Rules.[13] The other five channels were not employed during this period, and for the sake of clarity in the Rules, these other channels should be deleted from the provisions for a special purpose system in the Gulf of Mexico. Accordingly, Section 87.263 of the Rules should be revised as shown in Appendix A to delete the unnecessary provisions of this Rule and to reflect the current regulations.

Based on the foregoing considerations, the proposed revisions to the FCC's Rules in Appendix A will accommodate the requirements of the FAA in this Rulemaking and the Small

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[11] Report & Order, GEN Docket 89-295, 5 FCC Rcd at 3957, 3958.

[12] Memorandum Opinion & Order, GEN Docket 89-295, 6 FCC Rcd at 2292.

[13] Under the rules proposed in the Appendix, Chevron would be free to change its system, add stations, and move stations within the Gulf of Mexico region, and its grandfather rights would inure to its successors and assigns.

Aircraft Manufacturers Association (SAMA) in RM-9376 for FIS-B, and clarify the Rules pertaining to AOC use of the band 136-137 MHz. The requests by the FAA for specific designation of FIS-B frequencies, for the conditions to be placed on the use of 136.5-136.975 MHz, and for government/non-government designation for 136-137 MHz band are inappropriate, and ARINC and ATA firmly oppose these proposals. ARINC and ATA request the FCC to act promptly to issue a Notice of Proposed Rulemaking to implement the compromise as described in the Appendix to these Comments. Because of the consensus reached on these modifications to the FCC Rules, ARINC and ATA urge the Commission to complete this proceeding within the year. The rules proposed represent the best compromise of differing interests that it has been possible to fashion, and would thereby serve the public interest.

Respectfully submitted,

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April 19, 1999

Appendix A

PROPOSED RULE CHANGES

§ 2.106 Table of Frequency Allocations

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US244 The band 136.000-137.000 MHz is allocated to the non-Government aeronautical mobile (R) service on a primary basis, and is subject to pertinent international treaties and agreements. The frequencies 136.000 MHz, 136.025 MHz, 136.050 MHz, 136.075 MHz, 136.100 MHz, 136.125 MHz, 136.150 MHz, 136.175 MHz, 136.200 MHz, 136.225 MHz, 136.250 MHz, 136.275 MHz, 136.300 MHz, 136.325 MHz, 136.350 MHz, 136.375 MHz, 136.400 MHz, 136.425 MHz, 136.450 MHz, and 136.475 MHz are available on a shared basis to the Federal Aviation Administration for air traffic control purposes, such as automatic weather observation services (AWOS), automatic terminal information services (ATIS), flight information services-broadcast (FIS-B), and airport tower communications. Stations licensed prior to January 2, 1990, using the 136-137 MHz band for space operations (space-to-earth) may continue to use this band on a secondary basis to aeronautical mobile (R) service stations. No new assignments will be made to stations in the above space services.

§ 87.131 Power and emissions

Class of Station	Frequency Band/ Frequency	Authorized emission(s)	Maximum Power[1]
. . .			
Aeronautical enroute and aeronautical fixed	...		
	VHF	A3E, A9W, G1D	200 watts[2]
...			
Airport control tower	VHF	A3E, G1D, G7D	50 watts
...			
Aircraft (communications)			
	...		
	VHF	A3E, A9W, G1D, G7D	55 watts

§ 87.133 Frequency Stability

Frequency band ... and categories of stations	Tolerance[1]	Tolerance[2]
...		
(5) Band—100 to 137 MHz	...	...
Aeronautical Stations	50[4]	20[12]
. . .	. . .	. . .
Aircraft and other mobile stations in the Aviation Services.	50[5]	30[1013]
. . .		

[12] For emissions G1D and G7D, the tolerance is 2 parts per 10^6.

[13] For emissions G1D and G7D, the tolerance is 5 parts per 10^6.

. . .

§ 87.137 *Types of emission.*

Class of emission	Emission designator	Authorized bandwidth (kilohertz)		
		Below 50 MHz	Above 50 MHz	Freq. Dev.
...				
G1D	14K0G1D		25	
G7D	14K0G7D		25	

§ 87.139 Emission limitations

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(j) For VHF aeronautical stations and aircraft stations operating with G1D or G7D emissions:

(1) The amount of power measured across either first adjacent 25 kHz channel shall not exceed 0 dBm.

(2) The amount of power measured across either second adjacent channel share less than -25 dBm and the power measured in any other adjacent 25 kHz channels shall monotonically decrease at a rate of at least 5 dB per octave to a maximum value of -52 dBm.

(3) The amount of power measured over a 16 kHz channel bandwidth centered on the first adjacent 25 kHz channel shall not exceed -20 dBm.

§ 87.187 Frequencies

. . .

(dd) The frequencies 136.xxx, 136.xxx, 136.xxx, *[FAA to designate 3 frequencies from the band 136.000-136.475 MHz]* and 136.500 MHz are designated for ground-based broadcast services and may not be used by aircraft for transmission.

§ 87.263 Frequencies

(a) *Domestic VHF service.* (1) The frequencies in the 128.825-132.000 MHz and 136.500-136.975 MHz bands are available to service domestic routes, except that 136.750 is available to aeronautical enroute stations located at least 288 kilometers (180 miles) from the Gulf of Mexico shore line (outside the Gulf of Mexico Region). Frequency assignments are based on 25 kHz spacing. Use of these frequencies must be compatible with existing operations and must be in accordance with pertinent international treaties and agreements.

...

(5) The frequency 136.750 MHz is available in the Gulf of Mexico Region to serve domestic routes over the Gulf of Mexico and adjacent coastal areas. Assignment of this frequency in the Gulf of Mexico Region shall be to licensees first licensed on this frequency in the Gulf of Mexico Region prior to January 1, 1994, their successors and assigns, and is not subject to the conditions in § 87.261(c) and paragraph (a)(2) of this section. For the purpose of this paragraph, the Gulf of Mexico Region is defined as an area bounded on the east, north, and west by a line 288 km (180 miles) from the Gulf of Mexico shore line. Inland stations must be located within forty-eight kilometers (30 miles) of the Gulf of Mexico shore line.

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CERTIFICATE OF SERVICE

I hereby certify that on this 19th day of April, 1999, I caused copies of the foregoing Comments to be mailed via first-class postage prepaid mail to the following:

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